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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/599,948	06/23/2000	Simon Furmidge	367.38669X00	8956

20457 7590 11/03/2004

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EXAMINER

TRAN, PABLO N

ART UNIT	PAPER NUMBER
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2685

DATE MAILED: 11/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	09/599,948	FURMIDGE, SIMON	
	Examiner	Art Unit	
	Pablo N Tran	2685	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 June 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### ***Response to Arguments***

1. Applicant's arguments filed 06/17/04 have been fully considered but they are not persuasive.

The Applicant's stated that "Horie et al. fails to suggest that the claims requires a modulator including means for rectifying the input local oscillator signal provides to a first port to provide a conductance waveform at a multiple of the LO and means for mixing..." and "Otaka do not disclose a modulator with a gain control". In response to the Applicant's argument, the limitations on which the Applicant relies are not stated in the claim.

The Applicant's stated that "Horie et al. fails to suggest a means to provide a conductance waveform at a frequency multiple of the local oscillator signal". In response to the Applicant's argument, Horie et al. disclosed such means (see fig. 5/no. 17, col. 63-65).

The Applicant's stated that "Horie et al. fails to explicitly disclose the LO being provided at an even multiplication without the citation or prior art. In response to the Applicant's argument, the examiner provides the prior art (see *Damgaard et al.*, fig. 8/no. 320, col. 11/ln. 44-55 ) to show that such method is well known in the art.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3 and 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Horie et al.* (5,568,098) in view of *Otaka* (6,215,989).

As per claims 1 and 7, *Horie et al.* disclose a transmitter for a portable radio device comprising a modulator including a switching circuit, having a first port for inputting a baseband signal and a second port for inputting a local oscillator signal to the switching circuit which provide a conductance waveform at a frequency multiple of

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the local oscillator signal for up-converting the baseband signal to a radio frequency modulated carrier (fig. 5, col. 3/ln. 58-col. 4/ln. 67).

*Horie et al.* do not explicitly disclose such controls the gain of the modular to control the output level of the modulator. However, such gain control method of the modulator is well known in the art, as disclosed by *Otake* (fig. 6-10, col. 7/ln. 29-col. 10/ln. 48). Therefore, it would have been obvious to one of ordinary skill in the art to provide such method of gains control, as taught by *Otake*, to the transmitter of *Horie et al.* to control input amplitude signal at an optimum gain level while minimizing the reduction of the S/N ratio.

As per claims 2 and 8, the modified systems of *Horie et al.* disclose a local oscillator signal drives the switching means at a multiple of its frequency (see *Horie et al.*, fig. 5/no. 17, col. 3/ln. 58-col. 4/ln. 67).

As per claims 3 and 9, the modified systems of *Horie et al.* disclose means for controlling the gain of the modulator comprises current control means (see *Otake*, fig. 6-10, col. 7/ln. 29-col. 10/ln. 48).

4. Claims 4-5 and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Horie et al.* (5,568,098) in view of *Otake* (6,215,989) and further in view of *Hickman* (LTPs and active double balanced mixers, vol. 99, no. 1683, pg 126-128).

As per claims 4-5 and 10-11, the modified systems of *Horie et al.* do not specifically disclosed the transmitter having two cross-connected long tail pairs of bipolar transistors. *Hickman* disclosed such cross-connected long tail pairs of bipolar transistors. Therefore, it would have been obvious to one of ordinary skill in the art to

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provide cross-connected long tail pairs of bipolar transistors, as discussed in *Hickman*, to the transmitter of the modified systems of *Horie et al.* to minimized out-of-band emissions in a subsequent mixing with a carrier signal to generate a frequency modulated signal.

5. Claims 6 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Horie et al.* (5,568,098) in view of *Otaka* (6,215,989) and further in view of *Damgaard et al.* (6,526,265).

As per claims 6 and 12, as stated above in claim 1, the modified systems of *Horie et al.* do not explicitly disclosed the LO signal is provided at an even multiplication. However, such is well known in the art, as disclose by *Damgaard et al.* (fig. 8/no. 320, col. 11/ln. 44-55). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the reference frequency generator at even multiplication in order to expand the communication system application to have better flexibility or more versatility so that various reference frequency generators can be used for the FM transmitter systems.

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

*Damgaard et al.* (6,633,751), *Laub et al.* (56,255,912), and *Hell mark et al.* (5,982,233) disclose radiotelephone communication system.

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pablo Tran whose telephone number is (703)308-7941. The examiner normal hours are 9:30 -5:00 (Monday-Friday). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban, can be reached at (703)305-4385.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231


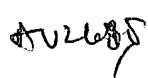
**or faxed to:**

**(703) 872-9314 (for Technology Center 2600 only)**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

**PABLO N. TRAN**  
**PRIMARY EXAMINER**

November 1, 2004